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# Rangeland Resource Report

## Little Deer Project

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Siskiyou County, California

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## Table of Contents

Executive Summary.....	1
Methodology.....	1
Analysis Indicators.....	1
Spatial and Temporal Bounding of Analysis Area .....	1
Affected Environment.....	1
Environmental Consequences.....	2
Alternative 1.....	2
Direct Effects and Indirect Effects.....	2
Cumulative Effects.....	2
Alternative 2.....	2
Direct Effects and Indirect Effects.....	2
Cumulative Effects.....	2
Alternative 3.....	3
Direct Effects and Indirect Effects.....	3
Cumulative Effects.....	3
Comparison of Effects .....	3
Rangeland Resource Report .....	4
Introduction.....	4
Methodology.....	4
Detailed Methodology .....	4
Analysis Indicators.....	4
Spatial and Temporal Bounding of Analysis Area .....	4
Affected Environment.....	5
Environmental Consequences.....	5
Alternative 1.....	5
Direct Effects and Indirect Effects.....	5
Cumulative Effects.....	6
Alternative 2.....	6
Direct and Indirect Effects .....	6
Cumulative Effects.....	6
Alternative 3.....	6
Direct and Indirect Effects .....	7
Cumulative Effects.....	7
Summary of Effects .....	7
Compliance with law, regulation, policy, and the Forest Plan .....	7

## List of Tables

Table S- 1: Percentage of forage utilization at end of grazing season within the project area .....	1
Table S- 2: Comparison of alternatives based on acres of treatments that may affect range.....	3
Table 1: Percent forage utilizations at end of grazing season within the Horsethief Allotment .....	5
Table 2: Comparison of alternatives based on acres of treatments that may affect range .....	7

## Executive Summary

### Methodology

Prior to the fire, utilization data was taken annually using the landscape appearance method. This method uses a set of seven utilization classes; each with detailed descriptions of class qualifications, occurrence of each class is counted and then averaged. Immediately following the fire, ocular estimations were made to assess the amount of remaining vegetation that will be available for grazing.

### Analysis Indicators

The effects of the project on rangeland resources will be evaluated using two analysis indicators:

- Capable acres available during the grazing season: measuring the number of head months (HM) that are permitted on the allotment during the grazing season. This will be either a decrease in grazing or an equal level.
- Number of acres of native grasses/forbs.

### Spatial and Temporal Bounding of Analysis Area

The spatial limits of this analysis will be limited to the Horsethief grazing allotment in which the project area is located. This will allow for analysis of the total effect to the entire rangeland resource that will be associated with the project. Due to the nature of grazing permits, effects will be measured in the near term of 10 years or the length of a grazing permit and 40 years to consider trend of the resource.

### Affected Environment

Currently within the Little Deer project area there is little to no ground-covering vegetation with a large percentage of the area experiencing fire temperatures that cause loss of viability of the seed bank; this loss will make it difficult to have natural regeneration of vegetation. The project area is within the Horsethief grazing allotment (analysis area) that encompasses 26,020 acres; 56 percent of the analysis area is National Forest land and the remaining 44 percent is private. Of the total allotment, 5,503 acres burned which is about 21 percent of the total analysis area. The permitted livestock use for the Horsethief grazing allotment is 100 cow/calf pairs from June 1<sup>st</sup> thru September 30<sup>th</sup> totaling 400 head months (HM) within the grazing season. Given the pre-fire range management, forage utilizations were maintained within allowable use as noted in table 1 or modifications were made to ensure compliance.

**Table S- 1: Percentage of forage utilization at end of grazing season within the project area**

Location	2012	2011	2010	2009
Within the project area	14%	29%	28%	38%

After the Little Deer fire, there is much less browse vegetation than before the fire so capable acres for grazing within the project area are limited and little if any grazing currently occurs.

## **Environmental Consequences**

### ***Alternative 1***

#### **Direct Effects and Indirect Effects**

With this alternative, no project actions will take place; some brush is likely to come back (rabbit brush, for example) but this brush is not the most effective vegetation for range. By taking no action within the project area, there will be an increased likelihood of cheat grass seeding in, causing a change in both the feed value and timing for large ungulates (such as cattle, deer and elk). This change will also diminish the successful establishment of native grasses and forbs that serve an important role in feed quality for both livestock and wild ungulates, especially in the early summer months when nutrient requirements are peaked.

The increased likelihood of cheat grass within the fire area will also increase the likelihood of cheat grass to spread beyond the fire area through multiple transmission causes, both manmade and natural. This increased spread potential will have detrimental effects on the native plant communities within the larger analysis area as cheat grass out-competes native grasses for resources by taking advantage of moisture earlier in the growing season. Allowing invasive species to flourish will create a deficit of palatable forage and, therefore, over time lead to a decrease in the carrying capacity of large ungulates within the analysis area.

#### **Cumulative Effects**

Currently the Horsethief allotment is being analyzed; the proposed action in that analysis will decrease grazing in both Fox Flat and Bulls Meadow (outside the Little Deer project area but within the analysis area). Adding the effects of alternative 1 (as disclosed above) to this small reduction in available acres will not have substantial cumulative effects because the exclusion areas are small in acreage, provide only minimal amounts of forage for the allotment, and there is sufficient forage in the rest of the allotment to maintain capable acres and head months.

### ***Alternative 2***

#### **Direct Effects and Indirect Effects**

The availability of forage in the project area will vary depending on the success of native grass seeding and somewhat on the planting of shrubs such as bitterbrush. The short-term effects will be minimal due to the ability to move cattle to locations primarily away from the project area by adjusting salting locations and monitoring and moving cattle if they begin to congregate within the project area. The decreased utilization of the project area will have minimal effects to the other portions of the allotment due to the historic low utilization in other portions of the allotment. In the long-term, there will be a small but not substantial increase in the acreage of native grasses and forbs and no substantial effect to capable acres or head months.

#### **Cumulative Effects**

Adding the effects of alternative 2 to the ongoing and reasonable foreseeable future actions identified in alternative 1 will not have substantial cumulative effects to range.

## **Alternative 3**

### **Direct Effects and Indirect Effects**

The main source for short- and long-term forage availability in this alternative will be primarily dependent on the natural seed sources outside of the dead tree removal areas. These sources are both the surviving seed bank and the natural seed distributing methods due to the decrease in proposed native grass seeding. The decreased native grass seeding and brush planting in the project area will increase the likelihood of non-native annual grass conversion and decreased forage palatability and quality during the grazing season.

### **Cumulative Effects**

Cumulative effects of adding the effects of alternative 3 to the effects of ongoing and reasonable foreseeable future actions identified in alternative 1 are not substantial.

### **Comparison of Effects**

Alternative 1 will have the greatest likelihood of negative long-term effects to rangeland resources due to the lack of native grass seeding and brush planting. This will delay the successional process and decrease the forage availability within the project area. Alternative 3 has some grass seeding and planting of shrubs within the dead tree removal areas but not outside these areas.

Alternative 2 includes the largest amount of grass seeding and shrub planting both within and outside the dead tree removal areas and the greatest possible positive effect on rangeland resources.

**Table S- 2: Comparison of alternatives based on acres of treatments that may affect range**

<b>Treatment</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Mahogany and brush planting	0	490 acres	160 acres
Grass seeding	0	514 acres	239 acres

### **Compliance with law, regulation, policy, and the Forest Plan**

The project is in compliance with law, policy, regulation related to rangeland resource, and the standards for the Forest Plan as displayed in the Forest Plan consistency checklist, available on the project website.

# Rangeland Resource Report

## Introduction

The purpose of this report is to describe the condition of the range resource in the Little Deer project area and how this resource may be affected by the proposed action and alternatives for this project.

## Methodology

### *Detailed Methodology*

Prior to the fire, utilization data were taken annually using the landscape appearance method. This method uses a set of seven utilization classes, each with detailed descriptions of the qualifications for each class, occurrence of each class is counted and then averaged. After the fire multiple areas have been visually estimated to determine the amount of remaining vegetation that will be available for grazing.

Current forage conditions on within the Little Deer project are poor with very little vegetation available for grazing or browsing. Immediately following the fire, ocular estimations were made to assess the amount of remaining forage, but more precise measures will be taken in spring of 2015. These measures will be made using a pace-toe transect that will help to estimate frequency of native perennials, annuals, bare ground, and rock.

Post implementation of Little Deer project, frequency plots as well as photo points will be established to measure the effectiveness of planned activities and natural regeneration. These plots will not only be located in areas where activities are planned but also in locations void of activities, this will help to determine the natural ability of the landscape and help to inform on future actions.

### *Analysis Indicators*

The effects of the project on rangeland resources will be evaluated using two analysis indicators:

- Capable acres available during the grazing season:
  - Measuring the number of Head Months (HM) that is permitted on the allotment during the grazing season. This will be either a decrease in grazing or an equal level.
- Number of acres of native grasses/forbs.

### *Spatial and Temporal Bounding of Analysis Area*

The spatial limits of this analysis will be limited to the Horsethief grazing allotment in which the project area is located. This will allow for analysis of the total effect to the entire rangeland resource that will be associated with the project. Due to the nature of grazing permits, effects will be measured in the near term of 10 years or the length of a grazing permit and 40 years to consider trend of the resource.

## Affected Environment

Currently within the proposed project area there is little to no ground-covering vegetation with a large percentage of the area experiencing fire temperatures that would cause loss of viability of the seed bank. The project area is within the Horsethief grazing allotment which encompasses 26,020 acres, 56 percent being national forest land and the remaining 44 percent private. Of the total allotment 5,503 acres burned, which is about 21 percent of the total allotment size. About 3,422 acres of the project area are designated as forage (Management Area 16) in the Forest Plan which has specific goals for vegetation composition that will allow for beneficial forage quality and quantity for both livestock and wild game.

The permitted livestock use for the Horsethief grazing allotment is 100 cow/calf pairs from June 1<sup>st</sup> thru September 30<sup>th</sup> totaling 400 Head Months (HM) within the grazing season. Given the current management (before the fire), forage utilizations have been maintained within allowable use or modifications have been made to ensure compliance.

**Table 1: Precent forage utilizations at end of grazing season within the Horsethief Allotment**

Location	2012	2011	2010	2009
HT-1	37	34	37	42
HT-2	19	31	34	40
HT-3	35	29	23	35
HT-4**	14	29	28	38
HT-5	28	37	29	27
HT-6	46	77	56	57
HT-7	26	14	29	32

\*\*HT-4 utilization cage is located within the fire area.

A review of site conditions and monitoring data for the Horsethief allotment before the fire June 2014 found that current grazing management is meeting Forest Plan desired conditions and direction for resource management.

Before the fire, the shrub community was dominated by bitterbrush (*Purshia tridentata*), growing under the exiting canopy of conifers. Mountain mahogany (*Cerocarpus ledifolious*) generally occupied the rocky portions of the project area. Manzanita (*Ceanothus velutinus*) and rabbit brush (*Chrysothamnus spp.*) were most prevalent in existing openings. These areas would have interdispersed Fescues (*Festuca idahoensis*, *Festuca occidentalis*) and squirreltail (*Elymus elymoides*). Due to the high amount of grazing vegetation available in these areas, browse utilizations would be made by an ocular estimation rather than more complex methods that would require more man power.

## Environmental Consequences

### Alternative 1

#### Direct Effects and Indirect Effects

With this alternative, no project actions will take place. Brush is likely to come back with no treatment but this will not be the most effective vegetation for range resoruces considering that

rabbit brush will be the dominate species. By taking no action within the fire area there will be an increased likelihood of cheatgrass (*Bromus tectorum*) invading the area, causing a change in both the feed value and timing for large ungulates across the entire fire area. This change will also diminish the success rate of native grasses and forbs to establish within the fire area and begin the successional process. These early successional species serve an important role in feed quality for both livestock and wild ungulates, especially in the early summer months when nutrient requirements are peaked.

The increased likelihood of cheatgrass within the fire area will also increase the likelihood of cheatgrass to spread beyond the fire area through multiple transmission causes, both manmade and natural. This increased spread potential will have detrimental effects on the native plant communities in the surrounding areas by competing for resources by taking advantage of moisture earlier in the growing season. Allowing invasive species to flourish will create a deficit of palatable forage and therefore over time lead to a decrease in the carrying capacity of large ungulates within the surrounding areas.

### **Cumulative Effects**

Currently the Horsethief allotment is undergoing an Environmental Assessment in order to analyze the effects of grazing under current management. Current planned actions in other portions of the grazing allotment will be to decrease grazing in both Fox Flat and Bulls Meadow in order to preserve and restore those wetland areas from turn of the century practices that may have had lasting effects. This reduction in available acres will have minimal effects to the surrounding areas as the exclusion areas are small in acreage and provided only minimal amounts of forage for the allotment.

### **Alternative 2**

See chapter 2 for alternative description.

### **Direct and Indirect Effects**

The availability of forage in the project area will vary depending on the ability and successfulness of native grass planting. The short term effects will be minimal due to the ability to move cattle to locations primarily away from the project area by adjusting salting locations and monitoring and moving cattle of the begin to congregate within the project. The increased utilization should have minimal effects to the other portions of the allotment due to the low utilization in other portions but spot checks of during the grazing season should be increased to ensure no resource damage.

### **Cumulative Effects**

Cumulative effects of alternative 2 are the same as the alternative 1.

### **Alternative 3**

See chapter 2 for alternative description.

## Direct and Indirect Effects

The main source for short and long term forage availability in this alternative will be primarily dependent on the natural seed sources outside of the dead tree removal areas. These sources are both the surviving seed bank and the natural and human seed distributing methods due to the lack of native grass seeding. The decreased native grass seeding in the project area will increase the likelihood of non-native annual grass conversion and decreased forage palatability and quality during the grazing season.

## Cumulative Effects

Cumulative Effects of alternative 3 are the same as alternative 1.

## Summary of Effects

Alternative 1 will have the greatest likelihood of negative long term effects to rangeland resources due to the lack of native grass seeding. This will delay the successional process and decrease the forage availability within the project area. Alternative 3, although being a better option than the no action, has very little grass seeding in comparison to the project area. The overall effect will be beneficial, but likely will not simulate the natural mosaic of grasses, forbs, and shrubs.

Alternative 2 would be the most beneficial alternative for rangeland resources as it includes the largest amount of grass seeding as well as shrub planting. This will more closely resemble the natural mosaic pattern that would have been observed in pre-fire conditions.

**Table 2: Comparison of alternatives based on acres of treatments that may affect range**

Treatment	Alternative 1	Alternative 2	Alternative 3
Conifer Planting	0	1,952	1,595
Grass Seeding	0	514	239

## Compliance with law, regulation, policy, and the Forest Plan

All alternatives are in compliance with law, policy, regulation and the standards and guidelines for the Forest Plan as displayed in the Forest Plan consistency checklist, available on the project website.